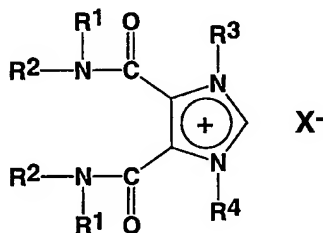


CLAIMS

1. A method of promoting tissue repair or wound healing, comprising the step of administering an effective amount of a 1,3-dialkyl-4,5-bis (optionally N-substituted carbamoyl)imidazolium salt to a subject in need of such treatment.
2. A method according to claim 1 of reducing inflammation, comprising the step of administering an effective amount of a 1,3-dialkyl-4,5-bis (optionally N-substituted carbamoyl)imidazolium salt to a subject in need of such treatment.
3. A method according to claim 1 or claim 2, in which the 1,3-dialkyl-4,5-bis (optionally N-substituted carbamoyl)imidazolium salt is a compound of formula I

**I**

20

- in which R^1 and R^2 are the same or different, and each is selected from the group consisting of hydrogen and a linear or branched alkyl group of 1 to 6 carbon atoms, which may optionally be substituted by an amino, substituted or unsubstituted aminomethyl, nitro, hydroxyl, halogen, carboxy, or carboxylic acid amide group;
- R^3 and R^4 are the same or different, and each is a substituted or unsubstituted linear or branched alkyl group of 1 to 6 carbon atoms; and
- X^- is a pharmaceutically acceptable inorganic or organic anion selected from the group consisting of chloride, bromide, iodide, sulphate, nitrate, phosphate, perchlorate,

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formate, acetate, fumarate, malate, malonate, citrate, benzoate, salicylate, benzenesulphonate, methylsulphonate, p-toluenesulphonate, gentisate, and naphthalene-8-sulphonate.

- 5 4. A method according to claim 3, in which at least one of R^3 and R^4 is unsubstituted.
5. A method according to claim 4, in which both R^3 and R^4 are unsubstituted.
6. A method according to claim 4 or claim 5, in
10 which where R^1 or R^2 is substituted with a substituted sulphonamide, the substituent is an alkyl chain of 1 to 6 carbon atoms.
7. A method according to any one of claims 1 to 6, in which R^1 and R^2 are different; and R^3 and R^4 are the same
15 or different, and is each independently an alkyl group with 1 to 6 carbon atoms.
8. A method according to claim 7, in which R^3 and R^4 are both alkyl groups of 1 to 4 carbon atoms.
9. A method according to claim 8, in which R^3 and R^4
20 are both methyl or both ethyl, or one of R^3 and R^4 is methyl and the other is ethyl.
10. A method according to claim 8, in which R^3 is methyl and R^4 is ethyl.
11. A method according to any one of claims 1 to 10,
25 in which X^- is benzenesulfonate, benzoate, salicylate, or gentisate.
12. A method according to claim 10, in which X^- is benzenesulphonate.
13. A method according to any one of claims 1 to 9,
30 in which X^- is an inorganic anion selected from the group consisting of chloride, bromide, and iodide.
14. A method according to any one of claims 1 to 13, in which the subject is suffering from epithelial damage to skin or mucous tissue, caused by erosions, ulcers, chronic
35 injury, infection, trauma or surgery.
15. A method according to any one of claims 1 to 14, in which the subject is suffering from a condition selected

from the group consisting of traumatic wounds, surgical wounds, burns, dehisced surgical incisions, grafts, diabetic ulcers, varicose ulcers, decubitus ulcers (bedsores), trophic ulcers, tropical ulcers, steroid
5 ulcers, indolent ulcers, oral or pharyngeal ulcers, aphthous ulcers, and corneal ulcers; and cervical erosions.

16. A method according to any one of claims 1 to 14, in which the subject is suffering from a condition selected from the group consisting of gastric or duodenal ulcers,
10 and ulcerative colitis.

17. A method according to any one of claims 1 to 14, in which the subject is suffering from a condition selected from the group consisting of myocardial damage, liver damage and bone damage.

18. A method according to claim 17 of stimulating liver regeneration.

19. A method according to claim 15 of reducing or preventing scar formation.

20. A method according to claim 16 of treatment of ulcerative colitis.

21. A method according to claim 15 of treatment of oral or pharyngeal ulceration.

22. A method according to claim 17 of treatment of hepatic cirrhosis or chronic active hepatitis.

25 23. A method according to claim 16 of treatment of gastric or duodenal ulcers.

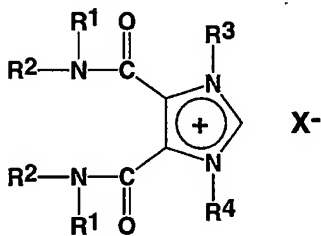
24. A method according to claim 17 of treatment of myocardial infarction.

25. A method according to claim 17 of stimulating
30 bone repair.

26. A method according to any one of claims 1 to 25, in which the 1,3-dialkyl-4,5-bis (optionally N-substituted carbamoyl) imidazolium salt is selected from the group consisting of

35 1,3-dimethyl-4,5-bis(N-methylcarbamoyl)imidazolium benzenesulfonate,
1-methyl-3-ethyl-4,5-bis(N-methylcarbamoyl)imidazolium

- benzenesulfonate,
 1,3-diethyl-4,5-bis(N-methylcarbamoyl)imidazolium
 benzenesulfonate,
 1-methyl-3-ethyl-4,5-bis(N-methylcarbamoyl)imidazolium
 5 benzoate,
 1-methyl-3-ethyl-4,5-bis(N-methylcarbamoyl)imidazolium
 salicylate,
 1-methyl-3-ethyl-4,5-bis(N-methylcarbamoyl)imidazolium
 gentisate, and
 10 1-methyl-3-ethyl-4,5-bis(N-methylcarbamoyl)imidazolium
 chloride.
 27. A compound of formula I



15

- in which R^1 and R^2 are the same or different, and each is selected from the group consisting of hydrogen and a linear or branched alkyl group of 1 to 6 carbon atoms, which may
 20 optionally be substituted by an amino, substituted or unsubstituted aminomethyl, nitro, hydroxyl, hydrogen, carboxy, or carboxylic acid amide group;
 R^3 and R^4 are the same or different, and each is a substituted or unsubstituted linear or branched alkyl group
 25 of 1 to 6 carbon atoms; and
 X^- is a pharmaceutically acceptable inorganic or organic anion selected from the group consisting of chloride, bromide, iodide, sulphate, nitrate, phosphate, perchlorate, formate, acetate, fumarate, malate, malonate, citrate,
 30 benzoate, salicylate, benzenesulphonate, methylsulphonate, p-toluenesulphonate, gentisate, and naphthalene-8-sulphonate,
 with the proviso that when X^- is benzenesulphonate, R^1 is

hydrogen and R^2 is methyl, R^3 and R^4 are not methyl or ethyl.

28. A compound according to claim 27, in which at least one of R^3 and R^4 is unsubstituted.

5 29. A compound according to claim 28, in which both R^3 and R^4 are unsubstituted.

30. A compound according to any one of claims 27 to 29, in which where R_1 or R_2 is substituted with a substituted sulphonamide, the substituent is an alkyl chain
10 of 1 to 6 carbon atoms.

31. A compound according to any one of claims 27 to 29, in which R^1 and R^2 are different; and R^3 and R^4 are the same or different, and are each independently an alkyl group with 1 to 6 carbon atoms.

15 32. A compound according to claim 31, in which R^3 and R^4 are alkyl groups of 1 to 4 carbon atoms.

33. A compound according to claim 32, in which R^3 and R^4 are both methyl or both ethyl, or one of R^3 and R^4 is methyl and the other is ethyl.

20 34. A compound according to claim 33, in which R^3 is methyl and R^4 is ethyl.

35. A compound according to any one of claims 27 to 32, in which X^- is benzenesulfonate, benzoate, salicylate, or gentisate, with the proviso that when X^- is
25 benzenesulphonate, R^1 is hydrogen and R^2 is methyl, R^3 and R^4 are not methyl or ethyl.

36. A compound according to claim 35, in which X^- is benzenesulphonate.

37. A compound according to any one of claims 27 to 30 34, in which X^- is an inorganic anion selected from the group consisting of chloride, bromide, and iodide.

38. A compound according to any one of claims 27 to 37, selected from the group consisting of
1-methyl-3-ethyl-4,5-bis(N-methylcarbamoyl)imidazolium
35 benzoate,
1-methyl-3-ethyl-4,5-bis(N-methylcarbamoyl)imidazolium
salicylate,

1-methyl-3-ethyl-4,5-bis(N-methylcarbamoyl)imidazolium
gentisate, and
1-methyl-3-ethyl-4,5-bis(N-methylcarbamoyl)imidazolium
chloride.

5 39. A composition comprising a compound as defined in
any one of claims 27 to 38, together with a
pharmaceutically or veterinarily acceptable carrier.

40. A composition comprising a compound as defined in
any one of claims 1 to 13, together with a pharmaceutically
10 or veterinarily acceptable carrier, in which the
composition is adapted for topical administration.

41. A composition comprising a compound as defined in
any one of claims 1 to 13, together with a pharmaceutically
or veterinarily acceptable carrier, in which the
15 composition is adapted for oral, buccal or sub-lingual
administration.

42. A method of synthesis of a compound according to
claim 27, comprising the step of subjecting a 1-
alkylimidazole-4,5-bis(optionally N-substituted
20 carbamoyl)imidazole to alkylation (quaternization) with an
alkyl benzenesulfonate to produce the corresponding
imidazolium benzenesulfonate, and optionally replacing the
benzenesulfonate anion by ion exchange, in which the
imidazole moiety is as defined in claim 27.

25 43. Use of a 1,3-dialkyl-4,5-bis(optionally
N-substituted carbamoyl) imidazolium salt for the
manufacture of a medicament for the promotion of tissue
repair or wound healing.

44. Use of a 1,3-dialkyl-4,5-bis(optionally
30 N-substituted carbamoyl) imidazolium salt for the
manufacture of a medicament for reducing inflammation.

45. Use of a 1,3-dialkyl-4,5-bis(optionally
N-substituted carbamoyl) imidazolium salt for the
manufacture of a medicament for the treatment of epithelial
35 damage to skin or mucous tissue, caused by erosions,
ulcers, chronic injury, infection, trauma or surgery.

46. Use of a 1,3-dialkyl-4,5-bis(optionally

- 100 -

- N-substituted carbamoyl) imidazolium salt for the manufacture of a medicament for the treatment of a condition selected from the group consisting of traumatic wounds, surgical wounds, burns, dehisced surgical incisions, grafts, diabetic ulcers, varicose ulcers, 5 decubitus ulcers (bedsores), trophic ulcers, tropical ulcers, steroid ulcers, indolent ulcers, aphthous ulcers, and corneal ulcers; and cervical erosions.
47. Use of a 1,3-dialkyl-4,5-bis(optionally 10 N-substituted carbamoyl) imidazolium salt for the manufacture of a medicament for the treatment of a condition selected from the group consisting of gastric, duodenal, and peptic ulcers, and ulcerative colitis.
48. Use of a 1,3-dialkyl-4,5-bis(optionally 15 N-substituted carbamoyl) imidazolium salt for the manufacture of a medicament for the treatment of a condition selected from the group consisting of myocardial damage, liver damage and bone damage.
49. Use according to any one of claims 43 to 48, in 20 which the 1,3-dialkyl-4,5-bis(optionally N-substituted carbamoyl)imidazolium salt is as defined in any one of claims 3 to 13.
50. Use according to any one of claims 43 to 48, in 25 which the medicament is adapted for oral or topical administration.